



NOTE: This document is intended **only as a quick reference for installation** – please read the SP Controls Application Note for a complete description of this projector driver prior to installation.

I. Driver Features

1. Input Selection Mapping

Selection 1:	VIDEO
Selection 2:	VIDEO
Selection 3:	RGB 1
Selection 4:	RGB 2

2. Hidden Function Mapping (Default Configuration)

Using the ON button as a shift key, press the following buttons to access the specified projector features.

Selection 1:	BLANK
Selection 2:	MUTE
Selection 3:	ADJ LEFT
Selection 4:	ADJ RIGHT
Off:	MENU
Volume Up:	ADJ UP
Volume Down:	ADJ DOWN

3. Other Driver Features

Power Status Feedback Method	RS-232 Power Polling
Control Wiring	RS-232 and Infrared Emitter

II. Wiring Specifications

NOTE: For a wiring diagram, please see the SP Controls Application Note.

1. RS-232:

Wire the Panel RS-232 port to a female HD15 as follows:

TX to	13
RX to	14
GND to	10

Connect this female HD15 to the projector port labeled *CONTROL*.

2. Infrared Emitter:

Wire the Panel IR/Serial port to a female 1/8" Mini as follows:

IR/SER to	<i>tip</i>
GND to	<i>ring</i>

Connect to the included IR Emitter and attach the emitter bud to any projector IR window.

III. Additional Projector Information

The MP8670 must be configured in the following way for use with the Panel:

- **Baud Rate 9600:** Set the projector to 9600bps in the onscreen OPT. (OPTIONS) Menu: COM. SPEED setting.
- **Data Word 8N1:** Set the projector to use data word 8N1 in the onscreen OPT. (OPTIONS) Menu: COM. BITS setting.



Projector Driver Application Note

Viewsonic PJ1060

Revision A

This document describes the **Smart Panel** Projector Driver for the **Viewsonic PJ1060** projector. For more information on configuring and using the Panel see the *Smart Panel Configuration and Installation Guide*.

Please read the **SPECIAL CONTROL NOTE** below before attempting to control the Viewsonic. This driver is known to work only when the projector is configured for serial communication at **9600 8N1**.

I. PROJECTOR CONTROL

A. Volume and Power Control

Volume control for the Viewsonic is **absolute**.

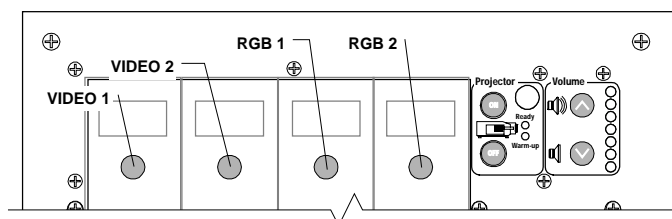
Absolute volume control for this model is also possible with use of SP Controls' optional **Audio Follow Video Pre-Amplifier**.

B. Input Selection Mapping

The following table specifies the factory preset input mapping for this Driver. The **Configuration Utility** can be used to customize these settings your installation.

Selection 1:	VIDEO
Selection 2:	VIDEO
Selection 3:	RGB 1
Selection 4:	RGB 2

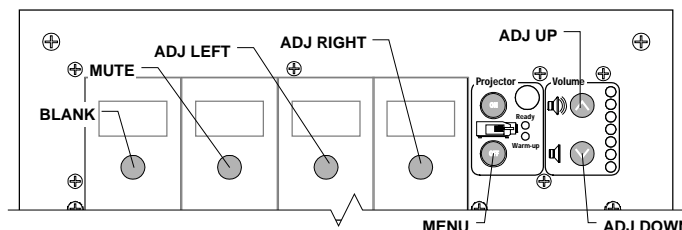
Input choices available with this Driver are VIDEO, RGB 1 and RGB 2.



C. Hidden Function Mapping

The following table specifies the factory preset hidden function mapping for this Driver. The **Configuration Utility** can be used to customize these settings your installation.

Selection 1:	BLANK
Selection 2:	MUTE
Selection 3:	ADJ LEFT
Selection 4:	ADJ RIGHT
Off:	MENU
Volume Up:	ADJ UP
Volume Down:	ADJ DOWN



Hidden functions names are based on the Viewsonic remote control and projector-top controls. *Menu* both summons and dismisses on screen menus. *Adjust* controls navigate through onscreen menus. *Blank* and *Mute* are toggles. **Note that on-screen menus can not be summoned if no source is detected on the currently selected input! (This is a Viewsonic behavior not under Panel control).**

Hidden functions are accessed by pressing the indicated key while the holding the **On** key down.

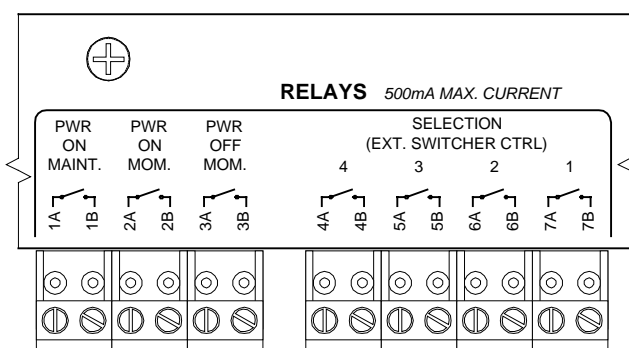
The hidden functions available for the Viewsonic with this Driver are as follows:

MENU	ZOOM +	BLANK
	ZOOM –	MUTE
ADJ UP	FOCUS +	
ADJ DOWN	FOCUS –	RIGHT CLICK
ADJ LEFT		LEFT CLICK
ADJ RIGHT	POSITION	
	TIMER	

D. Relays

The following table specifies the factory preset settings for the low-current relays found on the rear of the **Smart Panel**. The **Configuration Utility** can be used to customize these settings your installation.

Relay 1	ON Maintained
Relay 2	ON Momentary
Relay 3	OFF Momentary
Selection	Momentary; not Binary



E. Other Presets

The following table specifies other default factory settings for this Driver that affect is control of the Projector.

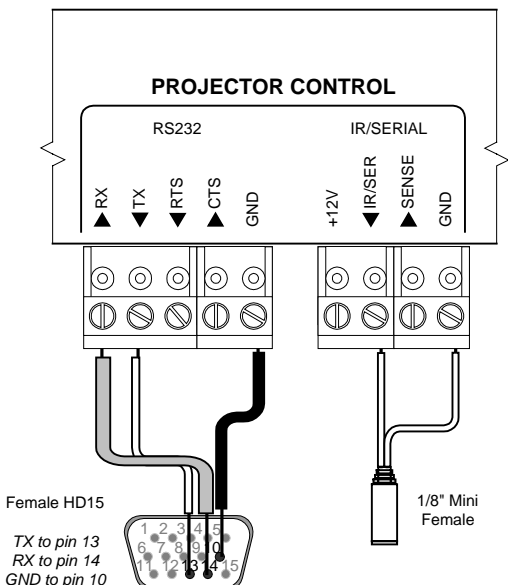
<i>Power Status Feedback Method</i>	RS-232 Polling (see note 1)
<i>Control Wiring</i>	Infrared Emitter (see note 2)

Control for the Viewsonic with this Driver is via both RS-232 and Infrared.

The following table specifies settings for the Panel's configurable timers. For more information on the inactivity shutdown feature and the lockout timer see the *Smart Panel Configuration and Installation Guide*.

Lockout Timer	80 seconds (see note 3)
Inactivity Shutdown	Disabled

II. CONTROL WIRING



This section specifies how RS-232 and Infrared should be wired to the Viewsonic projector.

A. RS-232 should be connected to the D-sub 15 female terminal labeled CONTROL. Connection should be as follows:

1. Wire the Panel to a female D-sub 15 as follows:
TX to 13
RX to 14
GND to 10
2. Connect this female connector to the projector port labeled CONTROL.

B. The IR Emitter should be connected to the one of the Viewsonic IR windows as follows:

1. Wire the Panel to a female 1/8" Mini as show; wire *IR/SER* to *tip* and *GND* to *ring*. Splicing and direct wiring to the IR Emitter is not recommended as it makes removal of the Panel for service more difficult.
2. Connect the included IR Emitter to the female mini.
3. Affix the IR Emitter to one of the IR windows on the projector.

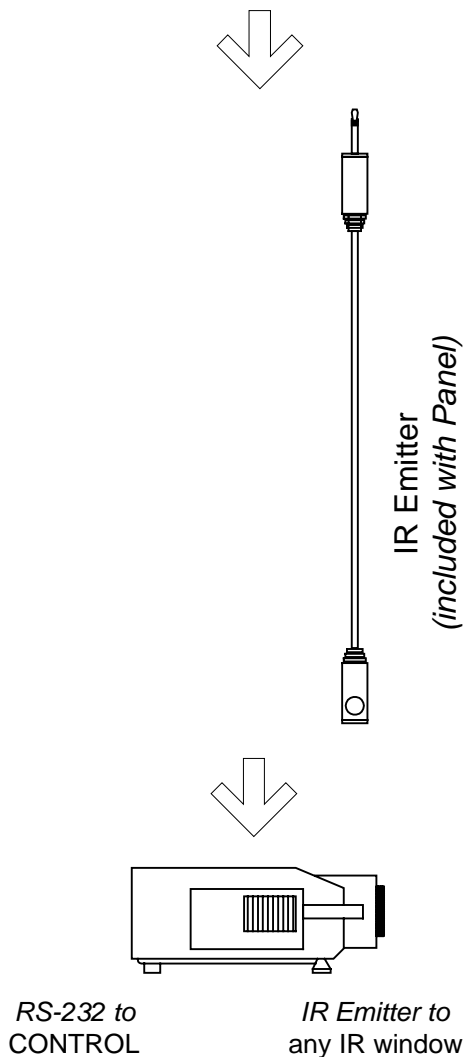
Note that the emitter glows red when IR is emitted so wiring can be verified.

SPECIAL CONTROL NOTE

Read before attempting to control the projector

The Viewsonic is configurable in ways that impact the possibility of Smart Panel control:

- **Baud Rate:** The Viewsonic projector may be configured via the onscreen menus to accept RS-232 control over a range of speeds. This Driver assumes control will take place at 9600bps. Insure that the projector is set to 9600bps in the onscreen OPT. (OPTIONS) Menu: COM. SPEED setting. If not, set the projector to 9600.
- **Data Word:** The Viewsonic projector may be configured via the onscreen menus to accept RS-232 control over a range of data word settings. This Driver assumes control will take place with 8 data bits, no parity bit, and one stop bit (**8N1**). Insure that the projector is set to 8N1 in the onscreen OPT. (OPTIONS) Menu: COM. BITS setting. If not, set the projector to 8N1.



III. TROUBLESHOOTING

Additional tips can be found in the *Smart Panel Configuration and Installation Guide*.

The Panel does not do anything at all.

When power is applied to the Panel it should run through a brief power on self-test, during which all of the Panel lights will turn on and off in sequence. If you do not see this self test, make sure power is connected correctly and that polarity is correct.

The Panel keeps turning itself off even though the projector is on.

The Panel turns itself off when power verification indicates that the projector is off. Check to make sure the RS-232 connection is correctly wired. If a third party power current sensor is being used, make sure correctly wired and calibrated. The most common cause for power polling failure when other control works, is that the RX line is incorrectly wired or soldered. Also, see the next issue

The Panel comes on, but cannot control the projector (and soon turns itself off!).

Make sure the Viewsonic is correctly configured for serial communications at 9600 8N1. If the projector is set to any other control rate and data format, control will fail regardless of whether wiring is correct. For information on how to verify and set the projector's serial communications settings, see the **SPECIAL CONTROL NOTE** in the control wiring section of this document.

The projector keeps turning itself off, though the Panel is on (then the Panel then shuts itself off).

The Viewsonic may be configured to shut itself off in the absence of any valid input signal. Refer to the Viewsonic manual for instructions on how to set and disable this behavior with onscreen menus. Alternately, ensure that Panel is not configured with an unexpected value for Inactivity Shutdown.

The onscreen menus won't appear!.

Note that the Viewsonic will **not** display on screen menus if there is not a valid source signal on the currently selected input. This is a Viewsonic behavior that the Panel cannot control. During testing it was also noticed that occasionally when the Panel reset after download, onscreen menus would not appear. Hard power cycling the projector seemed to remedy this behavior.

When I try to turn the projector on, the warming indicator (red LED) blink.

The projector is in *lockout mode*, and the Panel is waiting for its internal lockout timer to expire; this feature protects the projector's bulb. Be sure to let your client know about this behavior.

IV. TECHNICAL NOTES

1. By default, projector power is verified by polling every few seconds via the RS-232 port. Power polling can be suspended by depressing and holding the **On** key; polling will be restored when the key is released. Should the Viewsonic power off, the Panel will usually detect this condition and power off within thirty seconds. Should the Viewsonic power on, the Panel will usually detecting this condition and power on within fifteen seconds.
2. This Viewsonic is currently controlled via a combination of Infrared and RS-232 only. Wired Remote is not an option as the Viewsonic does not have a Wired Remote port.
3. The lockout timer specifies the amount of time allowed between sending **POWER OFF** and **POWER ON** to the projector (the delay allows the projector bulb to cool before re-powering). This delay can be configured using the **Configuration Utility**; however, adjusting the lockout timer delay is **strongly discouraged** as rapid re-powering causes undue wear on the projector's bulb. Also, the Viewsonic will **not** allow power to be restored before a minimum delay has expired. Therefore, **disabling the lockout delay will cause potentially confusing Panel behavior**.

V. REVISION HISTORY

1. Revision A (December,2003) Initial Release